DOCUMENT RESUME

ED 377 175 SP 035 614

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TITLE Concordance of Teacher Education Faculty Perspectives of the Knowledge Base during Its Development.
PUB DATE 4 Oct 91
NOTE 20p.; Paper presented at the Annual Meeting of the Northern Rocky Mountain Educational Research Association (9th, Jackson, WY, October 4, 1991).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Attitude Change; *Educational Development; Higher Education; *Knowledge Base for Teaching; Preservice Teacher Education; Research Methodology; Schools of Education; *Teacher Attitudes; Teacher Education Curriculum; *Teacher Educators
IDENTIFIERS *Concordance (Data)

ABSTRACT

This study was conducted to investigate eight teacher education faculty members' perspectives of concordance with existing and emerging knowledge during the actual development of a knowledge base. An instrument was developed by content analysis to measure faculty understanding and realization of 82 theoretical constructs in six domains: (1) theoretical and effective teaching methodologies; (2) teachers and teaching; (3) teaching to individual differences among learners; (4) social and institutional contexts of teaching; (5) teaching subjects and grade levels; and (6) clinical application in teaching. The instrument was administered on six repeated occasions over a year-long period prior to and following initial operation of the knowledge base. A Kendall Coefficient of Concordance with correction discontinuity was used to provide a standard method of assigning knowledge base entities according to faculty concordance of knowledge base properties when there existed no objective order of those theoretical knowledge base construct entities. Results indicated that teacher education faculty largely were in disagreement regarding knowledge base development. Encouraging, however, were the positive changes in attitudes by teacher education faculty in all six domains of the knowledge base. Contains 13 references. (Author/LL)

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Concordance of Teacher Education Faculty Perspectives of the Knowledge Base During its Development.

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Presented To:

Northern Rocky Mountain Educational Research Association
9th Annual Meeting October 4, 1991
Jackson, Wyoming

Concordance of Teacher Education Faculty Perspectives of the Knowledge Base During it's Development

Abstract

A year long study was conducted to measure the concordance of 82 theoretical constructs in six domains of a knowledge base in teacher education by 8 faculty members. Repeated measures were made a six dependent events prior to and following initial operation of the knowledge base. A Kendall Coefficient of Concordance with correction discontinuity was used to provide a standard method of assigning knowledge base entities according to faculty concordance of knowledge base properties when there existed no objective order of those theoretical knowledge base construct entities. Results indicated that teacher education faculty largely were in disagreement regarding knowledge base development. Encouraging, however, were the positive changes in attitudes by teacher education faculty in all six domains of the knowledge base.

Concordance of Teacher Education Faculty Perspectives

of the Knowledge Base During it's Development

The knowledge base (KB) in teacher education has been described as the difference between "state of the art" and the "state of practice" (Reynolds, 1989) in identifying what novice teachers should possess as essential teaching behaviors. Galluzzo and Pankratz (1990) implied that a KB is a body of literature that supports the substance and structure of the professional teacher education curriculum to inform decision making in practice. In short the KB is an integrative amalgam of theory, research, and wisdoms of practice.

Murray (1989) advised that students of teaching adopt a skeptical view toward the claims of educational theorists and researchers because of the fact that the discipline of education was yet in its earliest period of development. Skepticism aside, teacher education reformers and accreditation bodies have been adamant in the edict that all teacher education programs be grounded in a knowledge base of educational theory and research. Further heightening ambiguity has been the necessity for knowledge bases that were reality, not rhetoric and manifested themselves in some visible type of product. Thus teacher education has adopted the purposeful legacy of knowledge base without providing attention to the process of it's development from both emerging and existing constructs.

The focal purpose of a knowledge base appeared to be discipline based with an academic orientation (Feiman-Nemser, 1990) whereas the processes of such tended to be profession based with a practical orientation (Jackson, 1986; Tom, 1984; Schon, 1983). With respect to organizational theory and design, the knowledge base concept in individual professional education units was likely to suffer from inappropriate functional and product

structures (Daft, 1989) because of developmental incoordination within the interdependence of purpose, process, and decentralized creation of the KB product itself.

The purpose of a knowledge base is to gain legitimacy for teacher education. To that end professional education units are compelled to invoke a generic strategy to help teacher education achieve overall performance goals (Pearce & Robinson, 1988) in terms of effectiveness and efficiency. The end was clear but the means translucent at best.

A significant body of literature exists which identifies the salient characteristics of a KB, the purpose of a KB, and the necessary schema to determine effectiveness of the KB final outcomes. There was also a significant body of information available that suggests the inherent problems and difficulties associated with the creation of a teacher education KB. It was apparent that KB related issues have been of serious interest in teacher education for several decades (Beaudry, 1990).

Unfortunately what appeared to be lacking in the plethora of KB literature was information pertaining to actual teacher education faculty concordance with theoretical KB postulates as a result of the KB development process itself. To a certain extent the KB is an externally imposed requirement for accreditation of teacher education programs. Yet, the KB also requires the formulation of internally productive program beliefs, themes, outcomes, evidences, and modular design. Individual-oriented models of innovation processes (Rogers and Shoemaker, 1971), however, found that attitude formation was the critical decider as to whether innovation confirmation is adopted or rejected.

Clearly it was important to determine to what extent teacher education faculty attitudes and perspectives are in concordance with theoretical constructs of a KB in it's

development if the KB itself is to be confirmed as operational. Thus the purpose of this study was not to identify the purpose or product of KB development but rather to investigate teacher education faculty perspectives of concordance with existing and emerging knowledge during the actual development of a KB.

Method

Subjects and Setting

This study was conducted at a medium sized comprehensive institution of higher education in the Midwest. Eight faculty members from the Division of Education were participants in this study. They were all integral people in the development of the knowledge base for teacher education at the institution. Prior to the beginning of the study there existed no formal, identifiable knowledge base. In existence, however, was a traditional degree program in teacher education that led to teacher certification subsequent to completion of all required course work. The participants represented a cross section of the total faculty in terms of their years of service at the institution.

Instrumentation

An instrument, **Perceptions of Professional Education Knowledge Base Development**, was developed by content analysis to measure faculty understanding and realization of 82 factors of the knowledge base for professional education. The instrument contained six domains of interest to the researchers: (1) Theoretical and Effective Teaching Methodologies; (2) Teachers and Teaching; (3) Teaching to Individual Differences Among Learners; (4) Social and Institutional Contexts of Teaching; (5) Teaching Subjects and Grade Levels; and (6) Clinical Application in Teaching. Each of these general domains then had a

set of descriptors attached to it. The sums of these descriptors provided an overall score for each the general areas.

The instrument contained a five point response scale designed to measure the perceptions of the existence and functionality of the knowledge base within the teacher education program. The five point scale was: 5 = Existent and effectively operational; 4 = Existent and functional; 3 = Emerging in the planning process; 2 = Non-existent but is required; and 1 = Non-existent and not required. The data scale was not designed to be intervalized. Rather, it was intended that the scale would be a descriptive "picture" of the faculty perceptions of the "actual" knowledge base in relation to the "theoretical" constructs of a knowledge base at various points in time.

Procedures

The instrument was administered on six repeated occasions over the academic year of 1990 - 1991. The first administration occurred prior to the faculty beginning to work on the knowledge base. The second measure occurred after a knowledge base workshop was conducted. This workshop was designed to acquaint the faculty with the necessity to develop a knowledge base and also to provide input into the methodology for its development. The third administration occurred after the faculty had completed phase one of the knowledge base development, a set of belief statements about teacher education. The fourth administration occurred after the faculty had agreed upon a theme for the teacher education program. The fifth administration occurred after the faculty had operationalized the theme into a set of outcomes for the teacher education program. The sixth administration occurred upon the initiation of the development of individual knowledge bases centered around specific

content areas.

This study followed the position suggested by Keppel (1973) that planned multiple comparisons needed to orthogonal to flow meaningfully and logically. Procedural design of the study was a priori, multiple comparisons based on faculty judges' concordance with content analyzed knowledge base theoretical constructs. This design, as well as non-parametric choice of statistic, was selected to offset all possibility of Type I error due to small sample size as suggested by Pagano (1990).

Results

Choice of Statistic

The researchers examined the data which were collected. It was determined that there was a strong possibility that the data were not normally distributed. Given the small sample size (N=8) it was inappropriate to use a parametric test to assess the significance of the data. The rating scale also did not lend itself to analysis through parametric measures in that the scale was not intervalized. Therefore, it was determined that the most appropriate method of data analysis was a nonparametric assessment. The researchers chose the Kendall's Coefficient of Concordance (W) with correction for discontinuity (Kendall, 1948). Kendall's Coefficient of Concordance measures agreement among a group of judges. The intent was not to find out whether the faculty judges were correct in their rankings, but rather to determine whether there was agreement between the judges. In this case, whether there was agreement regarding the existence and operations of the knowledge base in the teacher education program in concordance with theoretical constructs of a knowledge base. If there

is perfect agreement among the judges, then W = 1.0. If there was perfect disagreement among the judges, then W = 0.0. In this study, the researchers were interested in each of the six general areas of the knowledge base theoretical constructs and the agreement or disagreement among the faculty as to the "point of time" status of the knowledge base at various stages of its development.

Analysis of the Data

The data were analyzed using Kendall's Coefficient of Concordance (W) with correction for discontinuity. The first step in the analysis of the data was to compute the sums of the rankings at each of the six separate administrations of the instrument for each of the six domains of the theoretical constructs of the knowledge base. Tables 1 - 6 present those means.

[insert tables 1 - 6 about here]

As can be seen from the tables, there were some definite trends apparent in the data. In all six domain areas, the sixth administration had the lowest sum of the rankings. This indicated that the faculty judges as a whole believed that the knowledge base development was moving closer to being existent and effectively operational. The other administrations varied a great deal across the six administrations.

The second procedure in the analysis of the data was to compute the Kendall W with correction for discontinuity for each of the six domains of the theoretical constructs of the knowledge base. Table 7 presents the results of those analyses.

[insert table 7 about here]

As can be seen from this table, the only domain area which contained a significant agreement among the faculty was Teaching to Individual Differences ($W = .2504$, $p < .05$). This one domain was the one time when the 8 faculty judges were in some degree of agreement throughout the six administrations of the instrument regarding the status of the theoretical constructs of the knowledge base.

Discussion

The analysis of the data provided the researchers with a great deal of information concerning the agreement and disagreement levels of the faculty throughout an academic year devoted to identifying and implementing an existent and effectively operational knowledge base for teacher education. The results of the study indicated that the faculty largely were in disagreement regarding the knowledge base development. These results were not unexpected by the researchers.

This disagreement may have been due to the involvement of faculty in the construction of the knowledge base. Many faculty had strong feelings that the knowledge base is not an important issue. They had been involved in preparing educators for many years and had developed skills and attitudes related largely to intuition and wisdom of past practice. They perceived an already existing knowledge and understanding as to what particular skills needed to be taught to preservice teachers. Unfortunately, they did not understand the necessity for knowing and presenting the theory and research which supported those skills. The development of a professional knowledge base creates a great deal of disequilibrium in those faculty. Other faculty viewed the development of a knowledge base as an infringement on their already over-burdened schedule. Faculty with large teaching

schedules, advising loads, and supervision assignments reacted negatively to further time constraints. Those faculty did not see the definite need for this development. A third group of faculty responded to the development of the knowledge base as an opportunity to further clarify what is being done in the teacher education program. Those faculty viewed the development of the knowledge base as an opportunity to support their beliefs about teacher education and the content of the curriculum.

The encouraging aspect of this study was the changing of attitudes at the end of the academic year. In all six domains, the faculty as a whole demonstrated the most positive response to the theoretical constructs of the knowledge base. While not all of the faculty ranked the last administration as the highest, the total group did. There were two possible conclusions related to this. First, the faculty believed that the knowledge base development was reaching a point closer to existent and effectively operational. Second, the faculty were exhausted from examining the constructs and just want to get on with their work. The researchers believed that the faculty chose the former. One implication associated with this decision was that the faculty had moved the development of the knowledge base away from being a burden and into an opportunity for further professional development.

It was highly recommended that others replicate this study and include more subjects. Even though the results of this study were focused upon a specific teacher education program and its knowledge base, it perhaps represents the first study investigating faculty perceptions of the reality associated with the creation of a knowledge base. One would expect future results to vary due to the individuality of each teacher education knowledge base and faculty involved in the creation of such. Only when the discipline of teacher education begins to

study the development process of knowledge base, rather than merely the product itself, will professional teacher educators begin to thoroughly embrace and accept the notion of knowledge base. As teacher education continues to develop a workable and effective knowledge base for the profession, it is necessary that we all see the attitudes of the faculty who must create and deliver the knowledge base to the novitiates.

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Pre KB Workshop	28.50
KB Workshop	36.00
Belief Statements	24.00
Theme Development	33.50
Outcome Statements	26.50
KB in Content Areas	19.50

Table 1: Sums of Rankings; Theoretical and Effective Teaching Methodologies

Pre KB Workshop	24.00
KB Workshop	34.00
Belief Statements	25.50
Theme Development	28.50
Outcome Statements	32.50
KB in Content Areas	23.50

Table 2: Sums of Rankings; Teachers and Teaching

Pre KB Workshop	29.00
KB Workshop	35.50
Belief Statements	34.00
Theme Development	29.00
Outcome Statements	26.00
KB in Content Areas	14.50

Table 3: Sums of Rankings; Teaching to Individual Differences

Pre KB Workshop	32.50
KB Workshop	31.50
Belief Statements	32.00
Theme Development	23.50
Outcome Statements	29.50
KB in Content Areas	19.00

Table 4: Sums of Rankings; Social and Institutional Contexts of Teaching

Pre KB Workshop	31.00
KB Workshop	27.50
Belief Statements	26.50
Theme Development	24.00
Outcome Statements	40.00
KB in Content Areas	19.00

Table 5: Sums of Rankings; Teaching Subjects and Grade Levels

Pre KB Workshop	34.00
KB Workshop	26.00
Belief Statements	26.50
Theme Development	30.50
Outcome Statements	32.00
KB in Content Areas	19.00

Table 6: Sums of Rankings; Clinical Applications of Teaching

Domain	W
Theory and Effective Teaching	.1652
Teachers and Teaching	.0884
Teaching to Individual Differences	.2504*
Social and Institutional Contexts	.1357
Teaching Subjects and Grade Levels	.2254
Clinical Application in Teaching	.1299

Table 7: Kendall's W in the six domain areas
* $p < .05$